

ABSTRACT

5 A control device including a housing and a carrier moveable with respect to the
housing in a first rotary degree of freedom. A first sensor senses the movement of the
carrier and outputs a first control signal. A roller rotatably coupled to the carrier rotates
with the carrier in the first degree of freedom and rotates independently of the carrier in a
second rotary degree of freedom. A second sensor senses rotary motion of the roller and
outputs a second control signal. Preferably, an arm member coupled between carrier and
10 housing pivots about an axis. A third sensor, such as a switch, can be used to detect when
the carrier has been pushed in a direction substantially orthogonal to a plane of rotation of
the arm member. Force feedback can also be provided in the rotary degrees of freedom
of the control device.